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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,348

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Olivier J Poncelet

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EXAMINER

HEVEY, JOHN A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,348	Applicant(s) PONCELET ET AL.	
	Examiner JOHN A. HEVEY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/13/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claim 1 is amended, Claims 5 and 9 are cancelled. Claims 1-4, 6-8, 10-19 are pending and presented for examination.

Response to Arguments

1. Applicant's arguments with respect to claims 1-4, 6-8, and 10-17 have been considered but are moot in view of the new ground(s) of rejection.

Applicant amendment of claim 1, changes the scope of the claim and subsequent dependent claims, by amendment of the aluminum concentration from 0-0.3 mol/l to 1.5×10^{-2} - 0.3 mol/l. Furthermore, Poncelet (US4648492) teaches an example 1, which discloses an initial aluminum concentration of approximately 0.153 mol/l.

Applicant argues that the reference includes a heating step which makes distinct the invention over the prior art, this is not found persuasive. Poncelet '492 teaches a heating step under 100 C, which includes 15-35 C as required by claim 1. The step of heating does not appear to result in a materially different structure. Furthermore, applicant arguments that elimination of byproducts occur directly after formation, however this limitation is not found in the claim, and therefore is not found persuasive.

Applicant further argues that an optional chelating step found in claims 13-16 occurs in a different order than the prior art, and thus serves a different purpose, this is not found persuasive. The rearrangement of steps has been found to be obvious to one of

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ordinary skill in the art, moreover the addition of chelating agent in this case would result in the same outcome.

Regarding claims 18-19, applicant argues that the Raman spectra found in a similar European application shows distinctness over the applied reference, this is not found persuasive. Claims 18-19 are drawn to a material obtainable by the method of claim 1. This method is shown to be taught by the prior art, and thus a material obtainable by this method would inherently possess the same characteristics as required by claim 19. Furthermore, the applied reference Poncelet '492 does not describe the Raman spectrum and therefore the comparison found in the arguments is not relevant.

Finally, regarding the obvious double patenting rejection, applicant argues that the addition of one non-hydrolyzable substituent is not obvious in view of the instant application. This not found persuasive because by claiming a material with only hydrolyzable substituents implies a choice not to include any non-hydrolyzable ones. It therefore would be obvious to one of ordinary skill in the art to substitute one hydrolysable substituent for a non-hydrolyzable one.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-4, 6-8, 10-12 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Poncelet (US6468492).

Poncelet (US6468492) is drawn to a method to prepare an aluminosilicate polymer, comprising contacting a mixed aluminum and silicon alkoxide or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum and silicon compounds with an aqueous alkali (sodium or potassium hydroxide; col. 1., line 67) in the presence of silanol groups and kept at a molar concentration of aluminum between $5E(-4)$ and $5E(-2)$ and Al/Si molar ratio between 1 and 3. The reference teaches a specific example of adding 1.53 moles of Al compound to 100 liters of water, thus resulting in 0.0153 mol/l aluminum concentration (see example 1). Said mixture is stirred (see Fig.1, and example 1) at a temperature below 100 C for a time sufficient to complete polymerization in the presence of silanol groups. A temperature below 100 degrees includes 15-35 C as required by claim 1, and does not appear to result in any material differences in structure. Therefore, it would have been obvious to one of ordinary skill in the art to select from the overlapping temperature ranges of 15-35 C. The reference further teaches, silanol groups are provided by silica or glass beads with a

diameter between .2 and 5 mm, preferably 1 to 3 mm (col. 2, line 38), followed by removal of residual ions/byproducts.

US'492 teaches said method to prepare aluminosilicate polymer wherein alkali/Al ratio is about 2.3 (col. 3, line 34-47) and wherein alkali/Al ratio is about 3 (col. 3, line 34-51). In addition, the reference teaches where said precursor of mixed aluminum and silicon compound is a product of the hydrolysis of aluminum salts or aluminum haloalkoxides with silicon alkoxides or chloroalkoxides. Also, where said precursor is the result of the reaction of an aluminum halide and a silicon alkoxide such as tetramethyl or tetraethyl orthosilicate (col. 1, line 62). (Note, choice of tetramethyl or tetraethyl orthosilicate inherently read on silicon compounds comprising only hydrolysable functions as claimed in the instant case) US'492 further teaches the introduction of a chelating agent in 50:50 mixture of HCL and acetic acid to the precipitate (col.3, lines 54-58).

5. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poncelet (US6468492) as applied above, in view of Pinnaviaia et al. (US7132165).

a. Here, the prior art teaches addition of a chelating agent, specifically acetic acid (col.3, lines 54-58) but fails to teach the particular order of chelate addition in the instant claims. Whereas the instant claims 13-16 teach addition of a chelating agent after elimination of byproducts from the reaction medium (i.e. filtration) the prior art teaches chelating agent addition prior to said byproduct elimination. The prior art also fails to teach the addition acetic acid followed by the addition of another different chelating agent. However, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to additionally use one or more chelating agents after said byproduct elimination as taught by Pinnaviaia (col.13, lines 43-46). It would have been further obvious to one of ordinary skill to rearrange the steps of chelate addition. The rearrangement of steps has been found to be obvious to one of ordinary skill in the art. Pinnaviaia teaches the uses of various alkylating reagents after material synthesis. One would be motivated to make such a modification to functionalize the surface of material after synthesis as taught by Pinnaviaia (col.13, lines 43-46).

6. Claims 18 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Poncelet (US6468492).

b. Poncelet US'492 teaches a method to prepare an aluminosilicate polymer, comprising contacting a mixed aluminum and silicon alkoxide or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum and silicon compounds with an aqueous alkali (sodium or potassium hydroxide; col. 1., line 67) in the presence of silanol groups kept at a molar concentration of aluminum between $5E(-4)$ and $5E(-2)$ and Al/Si molar ratio between 1 and 3. Said mixture is stirred (see Fig.1, and example 1) at a temperature below 100 C for a time sufficient to complete polymerization in the presence of silanol groups.

Poncelet US'492 fails to teach the material obtainable by said method and the Raman spectrum characteristics provided in Claim 19 of the instant case. However, it would have been obvious to one of ordinary skill in the art to utilize this method to produce the material obtainable by said method, motivated by the benefit of increased industrial applicability. Furthermore, Raman spectrum are considered to be inherent

characteristics of a material. Therefore, materials made by the same method would inherently possess the same properties. Although, Poncelet '492 does not disclose a Raman spectrum, it teaches substantially the same method and would therefore result in a material with the same inherent properties.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-4, 6-8, 10-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, 10-11 and 17-24 of copending Application No. 10521899. The conflicting claims are identical to the instant claims except for the addition of non-hydrolyzable functional groups of silicon compounds. It would have been obvious to one of ordinary skill in the art to replace one hydrolyzable group with a non-hydrolyzable group. The selection of only hydrolyzable implies the consideration of using of non-hydrolyzable groups. Furthermore, the use of non-hydrolyzable groups is well known in the art (see for example, Pinnavaia et al. (US7132165)).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

2. Claims 18-19 provisionally rejected on the ground of nonstatutory double patenting over claim 1 of copending Application No. 10522006. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common

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subject matter, as follows: a material obtainable by a method for preparing aluminosilicate polymer comprising steps for treating a mixed aluminum and silicon alkoxide comprising only hydrolysable functions in the presence of silanol, stirring the mixture in the presence of silanol groups until a polymer is formed, and eliminating the byproducts from the reaction medium.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN A. HEVEY whose telephone number is (571)270-3594. The examiner can normally be reached on Monday - Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jah

/Jerry A Lorengo/

Supervisory Patent Examiner, Art Unit 1793